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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/554,908	09/13/2000	Mats Leijon	705/72452-2	6643
25269	7590	10/27/2003	EXAMINER	
DYKEMA GOSSETT PLLC FRANKLIN SQUARE, THIRD FLOOR WEST 1300 I STREET, NW WASHINGTON, DC 20005			MULLINS, BURTON S	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/554,908	<b>Applicant(s)</b> LEIJON ET AL.	
	<b>Examiner</b> Burton S. Mullins	<b>Art Unit</b> 2834	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 August 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |                                                                                              |                                                                             |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Suspension*

1. Pursuant to the Board of Appeal's final decision regarding U.S. Application No. 08/973,019, suspension has been lifted. As set forth in the decision on petition requesting suspension, the instant application was granted a suspension pending the decision on appeal of the '019 application. On November 27, 2002, the Board affirmed the rejection of the '019 application and on August 27, 2003, the Board denied applicant's request for reconsideration, thus terminating prosecution of the '019 application. An action on the merits follows.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-24 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Elton et al. (US 4,853,565). Applicant describes the "typical public frequency" traction electrical supply system in the specification, p.14, line 34+ (Fig.3) including transformer stations 41/42 connected to three-phase high-voltage distribution line 40 and a traction supply line fed by the transformer stations (Fig.3). The admitted prior art does not teach details of the transformer windings.

Elton, meanwhile, teaches a high voltage cable (Fig.7) for dynamo-electric machines comprising: a conductor comprising plural strands 102, at least some of which are in electrical contact with one another; a first semi-conducting layer 104 surrounding the conductor; a solid insulating layer 106 surrounding the first semi-conducting layer; and a second semi-conducting layer 110 surrounding the insulating layer and connected to ground. Elton teaches at c.2, lines 16-17 that the problem of corona discharge appears in transformer windings, too.

It would have been obvious to one having ordinary skill to employ the cable of Elton on the prior art public frequency supply system transformers since Elton's cable would have been desirable to prevent corona discharge appearing not only in dynamo-electric machines, but transformers, as well.

Regarding claims 2 and 11, the rotary frequency converters and high voltage switch gear are shown in applicant's prior art Fig.4 and discussed on p.16, lines 10+. Regarding claim 9, single phase lower voltage traction supply lines and a high voltage intermediate line connected to the traction supply line via one or more transformers are shown in prior art Fig.6 and discussed on p.17, lines 4+. Regarding the autotransformer of claim 17, this is described on p.19, line 32+ as being used in known system. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

4. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art and Elton as applied to claim 1 above, and further in view of Takaoka (US 5,094,703). Common knowledge and Elton substantially teach applicant's invention, but do not teach a cable with plural strands of insulated and uninsulated conductors.

Takaoka teaches a stranded large-sized, power transmission cable comprising a combination of uninsulated stranded conductors and insulated conductors (Figs.7-8, 10&11). The combination of insulated and uninsulated conductors reduces the total amount of insulation needed and reduces the coefficient of skin effect (c.2, lines 16-30).

It would have been obvious to modify common knowledge and Elton and provide insulated and uninsulated conductors per Takaoka since it would have reduced the coefficient of skin effect on the cable as well as the total amount of insulation needed for manufacture.

#### ***Response to Arguments***

5. Applicant's arguments filed 21 August 2002 have been fully considered but they are not persuasive. Applicant argues that Elton does not teach a high voltage cable winding in a rotating machine, but rather three separate applications. The examiner responds that Elton's winding structure in Figs.1-7 is suitable for windings in a dynamoelectric machine (abstract, lines 4-8), since Fig.7 is an alternative embodiment of the winding of Figs.1-6 used in a dynamoelectric machine. See c.8, lines 26-38. Applicant argues that Elton's cable is stiff and if bent would crack and not be able to withstand high voltage. The examiner responds that Elton at c.8, lines 3-9 notes that the semi-conducting layer can be chopped, mixed with resin and molded, or blown on any complex-shaped substrate, which suggests that the semi-

conducting layer can be molded or blown onto a cable without causing cable rigidity. Further, Elton teaches that the insulated electrical windings 50 initially extend axially and then bend circumferentially (c.5, line 67-c.6, line 4; Fig.5). Such a bend requires adequate cable flexibility. Regarding Takaoka, applicant argues that this reference is directed towards eliminating the skin effect. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Takaoka teaches that the combination of insulated and uninsulated conductors reduces the total amount of insulation needed and reduces the coefficient of skin effect (c.2, lines 16-30).

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to

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37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on 9-5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm  
October 21, 2003